Serial No.: 10/009,842

REMARKS

The above-referenced application is amended to correct additional inadvertant errors identified in the originally filed specification. No new matter has been added. Entry of this Preliminary Amendment is respectfully requested.

Respectfully submitted,

MCDERMOTT, WILL & EMERY

Michael E. Fogarty Registration No. 36,139

600 13th Street, N.W. Washington, DC 20005-3096 (202) 756-8000

Date: March 13, 2002 Facsimile: (202) 756-8087

MARKED-UP VERSION OF AMENDMENTS

IN THE SPECIFICATION:

1. Please replace the paragraph beginning at page 3, line 24, continuing on to page 4, with the following rewritten paragraph:

-- The P⁺ diffusion region 122 and the N⁺ diffusion region 112 are formed in the N-well region 130, and a pn junction is formed on a junction face between the P⁺ diffusion region 122 and the N-well region 130. Therefore, a diode can be constituted by using the P⁺ diffusion region 122 as an anode and the N⁺ diffusion region 112 as a cathode. In the diode element 1000, one diode includes a junction of a pair of p and n, and therefore as the pn junction area (i.e., the bottom area of the P⁺ diffusion region 122) increases, the current capacity of the diode element 1000 increases. Unlike the N⁺ diffusion region 112 or the P⁺ diffusion region 122 that have comparatively low electrical resistances, the N-well region 130 has a comparatively high electrical resistance, and thus a parasitic resistance 140 exists in the N-well region 130. This parasitic resistance 140 is connected in series to the diode constituted by the pn junction between the P⁺ diffusion region 122 and the N-well region 130. Thus, the parasitic resistance 140 of the N-well region 130 causes a voltage drop of the diode. As a result, the current capacity of the diode element 1000 is decreased. Therefore, in order to design the diode element 1000 such that a desired current capacity can be obtained, a layout is designed after determining a P+ diffusion region size 124 that defines the bottom area of the P⁺ diffusion region 122 and a distance (a

distance between the P^+ diffusion region 122 and the N^+ diffusion region 112) 114 that defines the magnitude of the parasitic resistance [130] 140.--

- 2. Please replace the paragraph beginning at page 11, line 16, with the following rewritten paragraph:
- --FIGS. 10(a) to [10(f)] 10(e) are cross-sectional views of a process sequence for illustrating a method for producing the diode element 300.--
- 3. Please replace the paragraph beginning at page 13, line 16, continuing on to page 14, with the following rewritten paragraph:
- --The first unit cell 10 has a first conductive type first semiconductor region 12 formed in the N-well region 30 and a contact region 14 for electrically connecting the first semiconductor region 12 to a line 50. In this embodiment, the first conductive type first semiconductor region 12 is an N⁺ diffusion region, and the N⁺ diffusion region 12 is electrically connected to the line 50 through a contact section 52 joined to the contact region 14 provided on the surface thereof. On the other hand, the second unit cell 20 has a second conductive type second semiconductor region 22 formed in the N-well region 30 and a contact region 24 for electrically connecting the [first semiconductor region 10] second semiconductor region 22 to the line 50. In this embodiment, the second conductive type second semiconductor region 22 is a P⁺ diffusion region, and the P⁺ diffusion region 22 is electrically connected to the line 50 through the contact

Serial No.: 10/009,842

section 52 joined to the contact region 24 provided on the surface thereof. When a P-well region is formed as a first conductive type semiconductor layer, the first conductive type first semiconductor region 12 can be used as the P⁺ diffusion region and the second conductive type second semiconductor region [12] 22 can be used as the N⁺ diffusion region.--

- 4. Please replace the paragraph beginning at page 19, line 23, continuing on to page 20, with the following rewritten paragraph:
- -- Next, as shown in FIG. 2(e), after depositing an insulating film 54 on the substrate 60, contact holes are formed selectively on the insulating film 54, and then, a line 50 (including contact sections 52) is formed. Since the contact sections 52 of the line 50 are joined to each of the contact sections [12] 14 of the first unit cells 10 and the contact sections [22] 24 of the second unit cells 20, each of the first unit cells 10 and the second unit cells 20 are electrically connected to the line 50. Thus, the diode element 100 can be obtained.--
- 5. Please replace the paragraph beginning at page 26, line 24, with the following rewritten paragraph:
- --The diode element 300 can be produced, for example, as shown in FIGS. 10(a) to [10(f)] 10(e). In this example, a diode element including a gate line 56 that is formed on a gate electrode structure 70 is produced.--

Serial No.: 10/009,842

6. Please replace the paragraph beginning at page 27, line 23, with the following rewritten paragraph:

--Next, as shown in FIG. [10(f)] 10(e), after depositing an insulating film 54 on the SOI substrate, contact holes are formed selectively in the insulating film 54, and then, a line 50 (including contact sections 52) and a gate line 56 are formed. Thus, the diode element 300 can be obtained.--

WDC99 556700-1.060188.0131